

Amendments to the Claims:

The listing of claims will replace all prior versions and listings of claims in the subject application:

Claim 1 (Currently Amended): A method for producing chromate chromates comprising characterized in that it includes: the chromite ore is decomposed with oxidant in the molten salt or in aqueous solution of alkali metal hydroxide, the leaching slurry is obtained via leaching of the reaction products with aqueous solution, and the primary chromate products are separated from the leaching slurry; the method comprises following steps:

(1) Chromite ore decomposing. A mixture of alkali metal hydroxide, alkali metal chromate, and ferrous residue can be obtained after the reaction of chromite ore with oxidant in the reactor in the molten salt or in aqueous solution of alkali metal hydroxide; the weight of the alkali metal hydroxide used is two to eight times as much as that of the chromite ore used; the amount of the oxidant is either equal to or above the stoichiometric amount for decomposing chromite ore; the water amount in the reaction system is in the range from 0 to 50% by weight of the total amount of all reactants; the reaction temperature is in the range from 200 to 500 °C; the reaction time is in the range from 1 to 20 hours;

decomposing a chromite ore by reacting the chromite ore with an oxidant in an aqueous solution of an alkali metal hydroxide at temperature of 200 to 500°C to produce a mixture containing the alkali metal hydroxide, an alkali metal chromate, and ferrous residue,

(2) To obtain a kind of slurry with an alkali metal hydroxide content of 30% to 70% by weight by leaching the mixture obtained in Step (1) with an aqueous solution of alkali metal hydroxide with a concentration range from 0 to 30% by weight;

leaching the mixture with an aqueous solution of the alkali metal hydroxide at a concentration of up to about 30 wt% to obtain a leaching slurry, and

(3) To separate the leaching slurry obtained in Step (2) and obtain respectively primary alkali metal chromate product, ferrous residue, and alkali liquor

separating and obtaining primary alkali metal chromate, ferrous residue, and alkali liquor from the leaching slurry.

Claim 2 (Currently Amended): A The method for producing chromate ehromates as claimed in Claim 1, further comprising wherein it also includes the purification of the primary chromate products to manufacture pure chromate crystal. It is carried out according to the following steps:

(4) ~~To dissolve~~ dissolving the primary alkali metal chromate ~~products obtained in Step (3)~~ in water or in an aqueous solution of the alkali metal hydroxide to ~~and~~ obtain a chromate aqueous solution[;]

(5) ~~To adjust the~~ adjusting pH value of the chromate aqueous solution ~~obtained in Step (4) to the range from 3 to 9 with an acidifying agent to obtain precipitates, filter~~ filtering out the precipitates, and dissolving the precipitates to obtain pure chromate aqueous solution;

(6) ~~To heat~~ heating the pure chromate aqueous solution to evaporate the water and obtain pure chromate crystal ~~and mother liquor after crystallizing, filtering, and drying, and~~ mother liquor.

Claim 3 (Currently Amended): A The method for producing chromate ehromates as claimed in Claim 1, wherein the said oxidant ~~is in Step (1) includes~~ air, oxygen, sodium nitrate, potassium nitrite, sodium peroxide, potassium peroxide, or a mixture ~~mixtures~~ thereof.

Claim 4 (Currently Amended): A The method for producing chromate ehromates as claimed in Claim 1, wherein the said alkali metal hydroxide used in decomposing chromite ore in Step (1) includes the alkali metal hydroxide recycled and supplemented from Step (3), the alkali metal hydroxide supplemented, or a mixture ~~mixtures~~ thereof.

Claim 5 (Currently Amended): A The method for producing chromate ehromates as claimed in Claim 1, wherein the said alkali metal hydroxide in Steps (1) and (2) is sodium hydroxide or potassium hydroxide.

Claim 6 (Currently Amended): A The method for producing chromate ehromates as claimed in Claim 1, further comprising
recycling and reusing the alkali liquor in decomposing the chromite ore
wherein it includes the alkali metal hydroxide aqueous solution obtained in Step (1) as alkali liquor and recycled to Step (1) to decompose the chromite ore.

Claim 7 (Currently Amended): A The method for producing chromate ehromates as claimed in Claim 2, wherein the said aqueous solution of the alkali metal hydroxide has a concentration of in Step (4) includes sodium hydroxide or potassium hydroxide aqueous solution with the concentration range from 0 to 20% by weight.

Claim 8 (Currently Amended): The method for producing chromate ehromates as claimed in Claim 2, wherein the said acidifying agent is an in Step (5) includes inorganic acid, an acidic gas, chromium anhydride, sodium dichromate, potassium dichromate, sodium bicarbonate, potassium bicarbonate, sodium bisulfate, or potassium bisulfate;

the said inorganic acid is ~~includes~~ sulfuric acid, hydrochloric acid, or nitric acid;

the said acidic gas is ~~includes~~ carbon dioxide or sulfur dioxide.

Claim 9 (Currently Amended): A The method for producing chromate ehromates as claimed in Claim 2, further comprising
recycling and reusing wherein it also includes the aqueous solution obtained as the mother crystallization liquor in Step (6) and recycled to Step (4) to dissolve the primary alkali metal chromate product.

Claim 10 (New): The method for producing chromate as claimed in claim 1, wherein weight of the alkali metal hydroxide to decompose the chromite ore is about two to eight times of that of the chromite ore.

Claim 11 (New): The method for producing chromate as claimed in claim 1, wherein amount of the oxidant is equal to or above stoichiometric amount for decomposing the chromite ore.

Claim 12 (New): The method for producing chromate as claimed in claim 1, wherein water amount in decomposing ore is up to about 50 wt% of total amount of reactants.

Claim 13 (New): The method for producing chromate as claimed in claim 1, wherein the chromite ore is decomposed at a reaction time of about 1 to 20 hours.

Claim 14 (New): The method for producing chromate as claimed in claim 1, wherein the oxidant is sodium nitrate, potassium nitrite, sodium peroxide, potassium peroxide, or a mixture thereof.

Claim 15 (New): A method for producing chromate comprising:
decomposing a chromite ore by reacting the chromite ore with an oxidant in a molten salt of an alkali metal hydroxide at a reaction temperature of 200 to 500°C to produce a mixture containing the alkali metal hydroxide, an alkali metal chromate, and ferrous residue,
leaching the mixture with an aqueous solution of the alkali metal hydroxide at a concentration of up to about 30 wt% to obtain a leaching slurry, and
separating and obtaining primary alkali metal chromate, ferrous residue, and alkali liquor from the leaching slurry,
wherein the oxidant is sodium nitrate, potassium nitrite, sodium peroxide, potassium peroxide, or a mixture thereof.

Claim 16 (New): The method for producing chromate as claimed in Claim 15, further comprising

dissolving the primary alkali metal chromate in water or in an aqueous solution of the alkali metal hydroxide to obtain a chromate aqueous solution,

adjusting pH value of the chromate aqueous solution to 3 to 9 with an acidifying agent to obtain precipitates, filtering out the precipitates, and dissolving the precipitates to obtain pure chromate aqueous solution;

heating the pure chromate aqueous solution to evaporate water and obtain pure chromate crystal after crystallizing, filtering, and drying, and mother liquor.

Claim 17 (New): The method for producing chromate as claimed in Claim 15, wherein reaction time is about 1 to 20 hours.

Claim 18 (New): The method for producing chromate as claimed in claim 15, wherein weight of the alkali metal hydroxide to decompose the chromite ore is about two to eight times of that of the chromite ore.

Claim 19 (New): The method for producing chromate as claimed in claim 15, wherein amount of the oxidant is equal to or above stoichiometric amount for decomposing the chromite ore.

Claim 20 (New): The method for producing chromate as claimed in Claim 15, further comprising

recycling and reusing the alkali liquor in decomposing the chromite ore.